Immune Building Program

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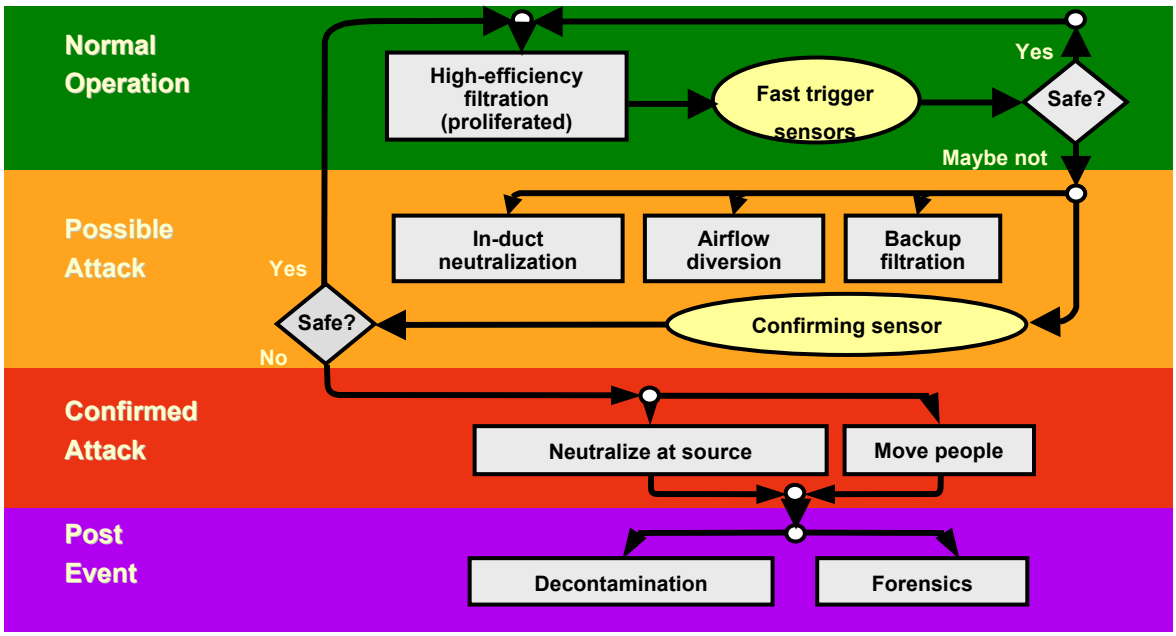
The DARPA Immune Building program seeks to make military buildings (such as barracks, office buildings, and command and control centers) far less attractive targets for attack by airborne/aerosolized chemical or biological warfare agents, by modifying and augmenting building infrastructure to greatly reduce the effectiveness of any such attack. The program has three goals: to protect the human inhabitants of such buildings in the event of an attack; to restore the building to full function as quickly as possible after the attack; and to preserve forensic evidence for treatment and retaliation.

The main focus is on the challenging problem of protection from internal releases; protection from external releases is also considered but is less challenging. The program goals will be achieved via infrastructure modifications/augmentations such as changes to the ordinary HVAC infrastructure – including real-time, active control of airflow patterns, and/or full-time, passive, highly efficient filtration – in addition to other modifications that might be appropriate – e.g. real-time neutralization of the aerosolized agent, or networked surveillance systems.



The four components of the Immune Building program are Integrated Systems Experimentation (ISE), Technology Development, the Toolkit, and Demonstration. In the ISE component performers will implement and evaluate various end-to-end protection systems in full-scale building testbeds. Under Technology Development, a number of component dervices are being developed to enhance the performance of the end-to-end systems. Development efforts include components for improved filtration, neutralization, and decontamination. The Toolkit is an integrated software package that will enable Immune Building systems to be tailored to new and retrofitted buildings. It will quantitatively estimate the protection such modifications can provide, and these predictions will be validated as part of the DARPA program. The Demonstration will take place during FY05 in an operational military building, and it will be the first full-scale building using active protection against the threat of an internal release.